Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A method for low dark current imaging, comprising:

providing a substrate;

on the substrate, forming a first layer and over said first layer forming a first well, both said first layer and said first well of a first polarity type;

forming a first oxide layer over the first layer and over the first well and on the surface of the first well such that the first oxide layer comprises an opening through which a portion of the first well is exposed; and

forming a diode electrode structure of a second polarity type that is opposite the first polarity type wherein the diode electrode structure is formed within an area that is within the exposed portion of the first well such that an intervening portion of the exposed portion of the first well exists between the diode electrode structure and the first oxide layer.

2. (Original) The method of claim 1, wherein the diode electrode structure is formed using an arsenic implant process.

3. (Original) The method of claim 1, wherein the intervening portion of the first well is formed as a continuous area surrounding the diode electrode structure.

4. (Previously Presented) The method of claim 1, wherein the diode electrode structure is formed such that a substantial portion of a depletion region that results does not extend to the first oxide layer.

5. (Previously Presented) The method of claim 1, wherein the first layer is an epitaxial layer and the first well is formed on said epitaxial layer.

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6. (Original) The method of claim 1, wherein the oxide layer is formed using a local oxidation of silicon process.

7. (Original) The method of claim 1, wherein the oxide layer is formed using a shallow trench isolation process.

8-18. (Cancelled)

19. (Previously Presented) A method for forming a low dark current imaging structure comprising the steps of:

providing a semiconductor substrate with a layer heavily doped with a dopant of one polarity;

growing an epitaxial layer on the substrate;

in the epitaxial layer forming a first well of the type dopant as the heavily doped layer in the substrate;

on the surface of the first well, forming spaced apart oxide insulation regions to expose a surface portion of the well;

in the first well and spaced from the oxide insulation regions, forming a diode electrode structure from a heavily doped layer with a dopant of a second polarity opposite to the first polarity with a portion of the first well intervening between the heavily doped layer of second polarity and the oxide insulation regions.

20. (Previously Presented) The method of claim 19, wherein the diode electrode structure in the first well is formed using an arsenic implant process.

21. (Previously Presented) The method of claim 19, wherein the intervening portion of the first well is formed as a continuous area surrounding the diode electrode structure.

22. (Previously Presented) The method of claim 19, wherein the diode electrode structure is formed such that a substantial portion of a depletion region that results does not extend to the spaced apart oxide insulation regions.

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23. (Previously Presented) The method of claim 19, wherein the oxide regions are formed using a local oxidation of silicon process.

24. (Previously Presented) The method of claim 19, wherein the oxide regions are formed using a shallow trench isolation process.

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